SUBJECT INDEX

Accoustic phonon scattering 316
Accoustic waves 202
Air tumbling 94
Alpha/beta transition 209
Aluminium arsenate 246
Annealing 209, 328
Antiphase boundary 205
Antiphase interface boundaries 197
L-Arginine fluoride 89
L-Arginine phosphate analogs 46
Asymmetrically cut crystals 201
Avalanche photo-diodes 285

Barium metaborate 10, 117
  crystal growth 31
  properties 39
Barrier modulation 320
Biorefringent interferometry 185
Bismuth silicon oxide 193, 199, 206
Bismuth substituted garnets 273
Bistable optical devices 3
Bragg angle 198
Bremsstrahlung topography 198
Bubble films 272
Burgers vectors 191

Cadmium telluride 192, 206
  contour map 192
Chalcogenide semiconductors 217
Chiral acid crystals, optical properties 101
Cleared wedge imaging 240
Contour map, cadmium telluride 192
Contour plots 191
Controlled atmosphere furnace 202
Copper 203
Copper–nickel–selenium crystals 217
Crystals
  asymmetrically cut 201
  biaxial, threshold power 75
  conversion efficiency 67
  dimensions, choice 68
  fluorescence 105
  growth
    dislocation 191
    high angular resolution 196
    high temperature solution 263
    physical vapour transport 136
    top seeding 117
    vertical Bridgman 144
    X-radiation diffraction imaging 189
  homogeneity 180
  monolithic 207
  nonlinear phase-matched 62
  optical nonlinear 9
  quality, thermal gradient 178
  rare earth 203
  regularity 196
  seeding 24
  structure, melt nonstoichiometry 181
Czochralski formed crystals 191

Dark-field imaging 235
Debye Waller factor 243
Diamond 203
Diamond dicing saw 233
Dielectric constant 315
Diffraction gratings 2
Diffraction imaging 196
  ex situ 203
  high resolution 197
Diode lasers 22
Diodes, avalanche photo 285
Dislocation nucleation 208
Dislocators 205
Doping, radiation 320
Double crystal monochromator 201
Dynamic diffraction theory 232

Epitaxy
  homo 273
  liquid phase 168, 286
Etalon 3
Etchpits 179
Eye protection 3

Ferroelastic domains 209
Ferroelectrics 164
Field emission gun 247
Fixed frequency laser 9
Fracture temperature 108
Free hole density 320
Frequency agile lasers 3
Frequency conversion 9
Frequency tunable lasers 4
Furnace
  controlled atmosphere 202
  heat pipe 29
  silicon carbide 121
  tubular two-zone 146, 177
  wire wound 121

Gallium arsenide 203
  undoped liquid encapsulated 191
Glass crystallization 276
Goniometer, optical nonlinear 87

Harmonic generation 19
Heat pipe furnace 29

Heteroepitaxial leyers 231
Hexagonal ferrites 273
High angular resolution 196
High power lasers 59
High resolution diffraction imaging 190
High temperature solution growth 23
Hole mobility 320
Holographic storage 164
Homoepitaxy 273
Homopolar bonds 205
Hydrothermal growth 166

Imaging techniques 231
Immersion oil 83
Indium antimonide 206
Indium phosphide, tin, sulphur and zinc doped 206
Induced striations 274
Interfaces 204
Interferometry, biorefringent 185
Ion-beam thinning 233
Ion implantation 320
Ion mass spectrometer 299
Isotherm of Cu–Ni–Se system 223

Jacobi function 110

Kyropoulos 166

Laser fusion 22
Lasers
  diode 22
  fixed frequency 9
  for viable power stations 97
  frequency agile 3
  frequency tunable 4
  high power 59
  long wavelength 285
  threshold power 69
Lattice irregularities 198
Lattice warping 191
Laue geometry 197
Laue pattern 182
Lead chalcogenides 313
Lead salts, dielectric constant 315
Lead selenide 313
Lead sulphide 313
Lead telluride 313
Lineage 204
Linear low angle grain boundaries 204
Liquid phase epitaxy 168, 286
Liquidus temperature 264
Lithium formate monohydrate 75
Lithium niobate 10, 208
Long wavelength laser 285

Magnesium oxide doped lithium niobate 10
Magnetic fields 202
Melt growth 209
Metal organic chemical vapour deposition 285
Microcrystal characterization 81
Microscope, spindle stage 83
Mirrors, phase conjugate 4
Modulation doping 313
Modulator, spatial light 1
Molten salt chemistry 27
Monochromator
  double crystal 201
  single crystal 200
Monolithic crystals 207
Monomagnetic surface layer 277
Multiparticle models 265
Multi-quantum well 287

Nickel 203
Nickel–selenium system 220
Nonferroelectrics 164
Nonlinear crystals
  for frequency conversion 115
  thermal loading 22
Nonlinear materials
  biaxial 75
  organic 97
  threshold damage 70
  uniaxial 73
Nonlinear optical crystals
  growth defects 10
  modification 47
  optical properties 10
Nonlinear optical goniometer 87
Nonlinear optical materials 1
  characterization 11
  criteria 16
  database 80
Nuclear emulsion photographic plates 202

Optical beams, distorted 4
Optical computing 1
Optical crystals, nonlinear 9
Optical damage threshold 21
Optical devices, bistable 3
Optical diffractogram 251
Optical limiters 4
Optical materials, nonlinear 1, 9
Optical parametric oscillator 20
Optical switching 2
Optical waves, time reversal 4
Oscillator, optical parametric 20
Oxide compounds, growth 27
Oxygen ion concentration 266

Peritectic reaction 223
Phase boundaries 267
Phase conjugate mirrors 4
Phase conjugation 4
Phasematching, L-arginine fluoride 89
Phenomenological parameters 306
Phonon scattering 316
Photoadsorption 319

Photoconduction 320
  temperature 322
Photodetectors 313
Photorefraction 2
Photoresponse 329
Physical vapour transport 136
Polar optical phonon scattering 316
Polycrystal films, electrical properties 316
Polycrystalline materials 189
Polysilicon layers 207
Potassium niobate 10
  characteristics 170
  growth 161
  nonlinear optical applications 161
Potassium titanyl phosphate 10, 17, 20
Proustite 175
Pulsed time signature 202
Pulses, short generation 21
Pyrargyrite 175
Pyrolysis, low temperature 290

Quantum wells 243
  multi 287
Quartz crystals, high pressure grown 206

Radiation doping 320
Rare earth crystals 203
Rare earth iron garnets 269
Rare earth phosphates 27
Refractometer, double spindle stage 83
Retinal damage 4
Rotating anode topography 209

Sapphire 287
Scanning electron microscopy 217
Schrodinger engineering 189
Second harmonic generation 9
Selenium rectifiers 217
Semiconductors, chalcogenide 217
Sensitizer films 320
Sensor protection devices 3
Silicon, electric fields 208
Silver gallium sulphide 149
Silver selenogallate 144
Single crystal films, electrical properties 316
Single crystal monochromator 200
Solution growth
  high temperature 23
  top-seeded 24, 121
Space charge field 2
Spatial light modulator 1
Spectrometer, ion mass 299
Spindle stage microscope 83
Spontaneous nucleation 166
Sticking coefficients 306
Strontium hexagallate substrates 273
Subgrain boundary formation 202
Sulphur doped indium phosphide 206
Superparamagnetic particles 276
Synchrotron 200
Synchrotron radiation 198

Terbium aluminide 209
Tetramethylammonium-tetrachlorozincate 209
Thallium arsenic selenide 175
Thermal annealing 203
Thermal gradient 178
Thermal quenching 324
Thermal stresses 204
Tin doped indium phosphide 206
Topography
  rotating anode 209
  white beam synchrotron 196
Top-seeded solution growth 24, 121
Top-seeded solution pulling 166
Transmission electron microscopy 231

Urea crystals 9, 136

Vacuum fixing 318
Vibrating crystals 208

Wavelength, noncritical 77

X-ray diffreaction 189, 217
X-ray topograph 183

Zinc doped indium phosphide 206
Zinc sulphide 206

COMPOUND INDEX

Ag_3AsS_3 175
$AgGaSe_2$ 46, 144, 149, 187
Ag_3SbS_3 175
AgSeGa 144
AlAs 246, 254
AlGaAsSb 285
ArgF 89
ArgP 103

B_2O_3 27
B_3O_6 39
BaB_2O_4 10, 117
$BaCl_2$ 119
BaF_2 119
$Ba_2NaNb_5O_{15}$ 18
BiCaSrCu 271
$BiSiO_2$ 193, 199, 206

$CdGeAs_2$ 187
CdTe 192, 206
$CO(NH_2)_2$ 9, 71, 136
Cr 19
Cu 203
CuNiSe 217
Cu_2Se 218

GaAs 203, 254
GaSb 287
Ga_2Se_3 151

Ho 19

InGaAsSb 285
InP 206
InSb 206

$KNbO_3$ 10, 18, 161
$K_4Nb_6O_{17}$ 165
$K_6P_4O_{13}$ 271
$KTiOPO_4$ 271
KTiP 10, 17, 20

LiB_3O_5 45
LiCHO 75
$LiNbO_3$ 208
Li_2O 119

$MgO:LiNbO_3$ 10

$Na_2B_2O_4$ 119
Na_2O 119
Ni 203

Pb 315
$PbFe_{12}O_{19}$ 267
$PbO–PbF_2$ 27
PbS 313, 315
PbSe 313, 315
PbTe 313, 315

$SrBaNbO_3$ 70
StGa 273

TbAl 209
ThAsSe 175
Ti 19
Tl_3AsSe_3 46, 187
TlBaCaCu 271

V_2O_5 27

YBaCu 271
$YFeO_3$ 267
Y_2O_3 267

Zn 206
ZnS 206